

Using CSCW for developing problem-oriented teaching and learning in a net environment

Cheesman, Robin; Heilesen, Simon

Publication date:
2001

Citation for published version (APA):
Cheesman, R., & Heilesen, S. (2001). *Using CSCW for developing problem-oriented teaching and learning in a net environment*. Poster session presented at The first European Conference on Computer-Supported Collaborative Learning, Maastricht, Netherlands. <http://rudar.ruc.dk/handle/1800/815>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain.
- You may freely distribute the URL identifying the publication in the public portal.

Take down policy

If you believe that this document breaches copyright please contact rucforsk@ruc.dk providing details, and we will remove access to the work immediately and investigate your claim.

Robin Cheesman, Simon B. Heilesen

Using CSCW for developing problem-oriented teaching and learning in a net environment

Poster presented at Euro CSCL 2001

First European Conference on Computer-Supported Collaborative Learning
Maastricht (The Netherlands), 22 - 24 March 2001

Full text version

Abstract

Roskilde University's master's programme in computer-mediated communication combines face-to-face seminars with net seminars focusing on collaborative project work. Net-based learning based on CSCW offers both advantages and pitfalls: (i) it helps to activate all students, (ii) it fosters complexity in organising tasks, (iii) asynchronous environment generates a need for synchronous communication, and (iv) exaggerated structuring limits self-organising and motivation.

Keywords

CSCW, evaluation of CSCL environments, problem-based learning, problem-oriented project work.

Addresses of the authors and of the MCC-programme

Robin Cheesman (robin@ruc.dk)

Department of Communication, Journalism and Computer Science, Roskilde University, PO Box 260, DK-4000 Roskilde, Denmark

Simon B. Heilesen (simonhei@ruc.dk)

Department of Communication, Journalism and Computer Science, Roskilde University, PO Box 260, DK-4000 Roskilde, Denmark

Master of Computer-mediated Communication

(cmc-info@ruc.dk, <http://www.cmc.ruc.dk>)

Department of Communication, Journalism and Computer Science, Roskilde University, PO Box 260, DK-4000 Roskilde, Denmark

The setting

In August 2000 Roskilde University, Denmark, launched a new programme, *Master of Computer-Mediated Communication (MCC)*. This is an Open University programme, which requires two years of part time study. It is targeted at experienced information officers and journalists who feel the need for reskilling in a rapidly changing media world. Initial interest in the programme has been overwhelming, both in terms of the number of applications and, more importantly, in terms of the qualifications of the applicants. This short report outlines our reflections on how to create a suitable CSCL-environment for the programme based upon Computer Supported Collaborative Work (CSCW).

The course structure for the MCC-programme has been developed on the basis of our experiences with Roskilde University's successful InterKomm+ programme (Cheesman & Heilesen 1999). Courses constitute 60% of the syllabus in the first year and 50% in the second year, the remaining time being reserved for project work, resulting in a written report in the first year of study and a thesis in the second year.

Each course, lasting four to five weeks, is a hybrid between face-to-face and distance education. It is launched at a work-intensive weekend seminar (Friday afternoon to Sunday afternoon), taking place in quiet and quite isolated surroundings on the island of Bornholm in the Baltic Sea. Subject matter is introduced through a series of lectures, exercises and workshops. The students get to meet the instructors in charge of the course as well as one another. Both types of contact are considered essential for the success of the net-based seminar that is to follow.

Typically half a day of the weekend seminar is allotted for preparations for the net seminar. The students are divided into groups of four to five, are given a problem to work on and then have a couple of hours to get the group organised and to discuss how to deal with the problem. In our experience omitting this initial face-to-face contact in the group leads – if not actually to chaos – then certainly to massive frustration. As the students gain more experience in working in a net-based CSCW environment it might be possible to organise a project online, but novices relying almost entirely on virtual contact are likely to waste a lot of effort both on inefficient project organisation and on disagreement as to how to handle the assignment.

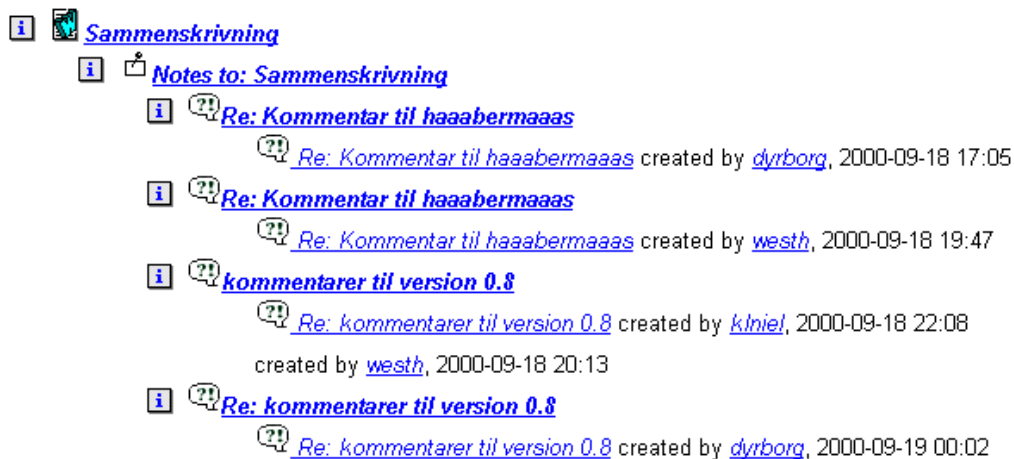
For the net seminars and as an environment for net activities in general we have chosen the German Open Source BSCW-system (Basic Support for Collaborative Work). We reviewed and eventually rejected a number of well-known distance education products. Ending up with a fairly “raw” implementation of BSCW may not be an ideal solution – or a lasting one. But it has given us free hands for experiments on how to create a learning environment using CSCW.

One of our basic assumptions in the planning of the MCC programme has been that the ability to work collaboratively in a virtual environment will be an important qualification, and that our students ought to get solid hands-on experience in the area. In setting up the BSCW-system we have tried to provide as much choice as possible for the groups to organise the system into a pleasant and productive virtual workspace. When the students first meet the system, it consists of a skeletal hierarchy of folders with half a dozen menu items such as “administration”, “syllabus” – subdivided into courses, “student profiles”, “technical matters” etc.

Most work actually evolves in the various course folders. Initially they consist of a course plan, readings, a folder for each group, and folders for the various deadlines that are meant to ensure a mildly enforced synchronisation of progress through the course. The deadline folders, usually one for each week of the course, constitute forums where most of the contact between instructors and students takes place. At the first deadline the group has to provide a problem definition and a synopsis for the project. At the final deadline the group has to deliver a paper, or a product accompanied by a commentary. The intermediate deadlines are optional for progress reports and discussions between students and instructors.

Apart from the deadlines, a policy of almost daoist *wuwei* (non-action) is adhered to. Wuwei does not mean inactivity or *laissez-faire*, but rather not forcing events, not resorting to the kind of over-doing which defeats its own purpose. Certainly, the instructors regularly monitor the various group folders, as far as they are publicly available (the groups may also create private work spaces), and they mediate when called upon to do so. But as long a work progresses in a satisfactory way the instructor does not attempt to influence the organisation or the discussions of the groups.

The approach used in the MCC programme is still in an experimental stage, but the conclusion so far is that it seems to work quite well. One of our reasons for choosing the BSCW-software as our platform was to see if it is possible to let discussion and collaborative work evolve around the creation of products (papers, presentations, web sites), rather than just conducting problem based discussions that may or may not be concluded by writing a paper. To put it somewhat squarely: Instead of using "e-mail with attachments", which is a typical format in distance education also when conducted in so-called conferencing systems, we have tried to focus on the objects or documents, assuming that CSCW is useful not only as a way of reaching a common understanding, but also as an environment for production.



The screenshot shows a hierarchical list of items in a BSCW environment. At the top is a folder icon followed by the text 'Sammenskrivning'. Below it is a document icon followed by 'Notes to: Sammenskrivning'. Under this document, there are several comment threads, each starting with an 'i' icon and a '?!' icon. The first thread is titled 'Re: Kommentar til haaabermamaas' and contains a comment by 'dyrborg' dated 2000-09-18 17:05. The second thread is also titled 'Re: Kommentar til haaabermamaas' and contains a comment by 'westh' dated 2000-09-18 19:47. The third thread is titled 'kommentarer til version 0.8' and contains two comments: one by 'klniel' dated 2000-09-18 22:08 and another by 'westh' dated 2000-09-18 20:13. The fourth thread is titled 'Re: kommentarer til version 0.8' and contains a comment by 'dyrborg' dated 2000-09-19 00:02.

A document is here being commented in two threads, one seemingly concerned with the content (Habermas), one focusing on "version 0.8". This illustrates the reverse situation as compared to a conferencing or email system where the document is attached. In our case the discussion is attached to its object. We also notice that the document is put under version control, i.e. a manipulation of the object by one participant does not erase the previous version, but adds a new proposal - with the possibility of returning to an earlier draft.

Thus we believe that we are able to take full advantage of all the basic functionalities of networked multimedia – tentatively defined as to observe, discuss and manipulate (Brown & Duguid 1995). Bringing all three of them into play provides for a rich virtual environment that appears to be suitable for the problem-oriented and project-based pedagogy as practised at Roskilde University.

Observations

It is much too early to draw definite conclusions let alone evaluate the experiences from the MCC programme. But after the first few months we are able to identify some of the influences of the BSCW-system on student behaviour, frustrations and needs.

BSCW helps to activate all students

“Lurkers” often constitute a problem in net based learning environments. Lurkers are students who do not actively participate in discussions and other collective activities on the net. They may very well be active learners behind the scenes, reflecting on course contents and on contributions by other students. However, if active participation is used as a measure of learning or even as a criterion for assessment, lurking is a problem for both students and teachers.

Lurking seems to be uncommon in the MCC programme activities. To some extent this may be due to the visibility of each student in a group environment, but also other explanations seem to offer themselves.

For one thing the participants in the programme are rather atypical Open University students. Most of them work professionally – and successfully – as writers, information officers or journalists. Few of them are likely to have writing inhibitions. Also they have invested plenty of their own or of their employer’s resources in joining the master’s programme, which is unusually expensive by Danish standards. Failure might be quite harmful to their prestige and/or self-esteem.

Secondly, project work in the CSCW environment allows some specialisation of functions. We have noticed, and encouraged, that the students have tried to conceptualise and distribute among themselves different roles in their group work. Some of these roles are “natural” consequences of written group collaboration: e.g. moderator, whip, or secretary. Other roles are derived from the actual task: e.g. designer, researcher, writer, or copy-editor.

The distribution of roles and responsibilities to a large extent reflects the students’ spontaneous desires and initial qualifications. This is of course a “happy” solution, but we realise that it may also be an unconscious strategy for avoiding difficult challenges. If this becomes evident, we shall have to find a way of enforcing role swapping.

BSCW fosters complexity in organising tasks

Most computer users have experienced how easily attempts at creating systematic file storage may turn into a labyrinthine mess. In a CSCW environment based on folder hierarchies there is a risk that the problems faced by the individual user will be multiplied by the number of group members who have access to a common workspace.

Adding to these difficulties are the facts that in a CSCW environment all tasks and all decisions have to be formalised in writing and have to be reflected in the organisation of a work space where the hierarchical arrangement provides the only way of distinguishing between the relative importance of different tasks.

Anticipating problems of navigation and transparency we created a top-level folder structure, which can only be changed by course administrators and tutors. We also provided help files with good advice on how to organise work. Still, initially our efforts were in vain. Learning-by-doing seems to be the only truly effective method of getting to master CSCW.

However, after a somewhat messy start we have witnessed the development of a surprising degree of order. To some extent order is brought about by a variety of experiments in organising and updating the workspace. But perhaps more importantly, the students have developed a practise of working out basic project organisation at face-to-face meetings prior to engaging in the net seminars.

BSCW use generates a need for synchronous communication

Not only is there a need for “real life” meetings on project organisation. The students also obviously need synchronous communication when working on a project. The intensity of this need was not anticipated, but it was driven home to us rather forcefully when the students started introducing logs of self-organised external chat sessions in their project archives.

Previously we have been using conferencing systems with threaded discussions. They make it possible to organise the contributions to a discussion in various ways, thus facilitating the collaboration towards common learning goals and common presentations in the form of essays, communication products etc.

However, results in project based group work cannot be achieved without a large number of decisions being made. The asynchronous environment not only lacks most of the phatic elements of face-to-face meetings, it is also too slow and too elaborate for effective decision-making. At first we tried to solve the problem by introducing the role of a chairperson empowered to summarise and close discussions. This was reasonably effective but it was not necessarily conducive to the harmony, consensus and loyalty among group members. Online chat, on the other hand, stimulates exactly these qualities, and if handled in an orderly fashion, 40 minutes or less of chat may very well solve problems that would otherwise occupy a week of non-decision.

Exaggerated structuring limits self-organising and motivation

We have described how course synchronisation and the communication between student groups and instructors take place. Anticipating the MCC students to be very mature and independent in their way of working, we adopted a wuwei approach of facilitating rather than directing the work process. However, initially we did introduce a weekly deadline (and implicitly a model for good project work) to make it possible for instructors as well as the students to keep track of progress. This approach proved so counterproductive that we have since had to make all intermediate stage deadlines optional.

By introducing even a moderate amount of work process synchronisation between groups it seems that we unintentionally undermined one of the great advantages of net based learning – that of asynchronous self-paced study, the advantages of which

should be particularly evident in project work. We are dealing with people with busy schedules who have to do a great deal of planning in order to fit in time for study. But they are also highly conscientious people, so in order to meet the weekly deadline groups started to introduce their own deadlines with intervals of one or two days, breaking up project work into a great many tasks to be accomplished with grinding regularity. This fragmentation tended to make the CSCW work unnecessarily complicated without actually improving efficiency much. On the human side it resulted in frustration, stress and a steep drop in motivation making some students even consider quitting. Extending wuwei also to course synchronisation runs counter to the conventional wisdom of distance learning, but it may be an approach worth exploring further when we are developing extended academic programmes for reskilling professionals.

We might add – as self-reflection – that the introduction of a wuwei principle in our distance education environment is not an addition to the principles of problem-oriented learning. Rather, it is a confirmation of the need both to support and to have confidence in the ability of the serious adult learner to be responsible for her/his own learning process. The tutor in a problem-oriented learning environment might therefore better remain still until action is called forth, but then provide the necessary and useful guidance.

Bibliography

- Brown, J.S. & Duguid, P. (1998). Universities in the Digital Age. In B.L. Hawkins & P. Battin (editors), *The Mirage of Continuity: Reconfiguring Academic Information Resources for the 21st Century*. Council on Library Resources, Washington, DC. Available: <http://www.parc.xerox.com/ops/members/brown/papers/university.html>
- Cheesman, R. & Heilesen, S.B. (1999). Supporting Problem-based Learning in Groups in a Net Environment. In J. Rochelle (editor), *Computer Support for Collaborative Learning (CSCL) 1999*. Stanford University, Menlo Park. Available: <http://kn.cilt.org/csc199/A27/A27.htm>